WHAT IS CLAIMED IS:

1. A method comprising:

transmitting a first copy of a signal from an antenna, the signal comprising a plurality of time-division multiple access (TDMA) frames; and

transmitting a second copy of the signal from the antenna, the second copy having a fixed delay and a random phase relative to the first copy of the signal, wherein the random phase changes from one of the TDMA frames to another of the TDMA frames;

wherein the first copy of the signal and the second copy of the signal are transmitted using hopping carrier frequencies.

2. The method of claim 1 wherein the fixed delay is about equal to $\frac{1}{2W}$, wherein W is a separation value, and wherein consecutive pairs of the hopping carrier frequencies for consecutive pairs of the TDMA frames are separated by an odd multiple of W.

3. The method of claim 2 wherein W is about equal to 200 kHz, and the fixed delay is about equal to 2.5 μsec.

4. The method of claim 2 further comprising:

partitioning a group of hopping carrier frequencies into at least two sets of carrier frequencies;

wherein consecutive pairs of hopping carrier frequencies for consecutive pairs of the TDMA frames are selected from different ones of the at least two sets.

5. The method of claim 4 wherein the at least two sets comprises a first set and a second set of carrier frequencies, wherein each even one of the TDMA frames has a respective carrier frequency selected from the first set, and each odd one of the TDMA frames has a respective carrier frequency selected from the second set.

6. The method of claim 1 further comprising:

transmitting a third copy of the signal from the antenna using the hopping carrier frequencies, the third copy of the signal having a fixed delay which differs from the fixed delay associated with the second copy, and a random phase which differs from the random phase associated with the second copy and changes from one of the TDMA frames to another of the TDMA frames.

7. The method of claim 1 further comprising:

forming the signal based on a speech signal by baseband channel coding and interleaving acts, a modulation act, and a pulse shaping act.

8. A system comprising:

an antenna; and

a transmitter to transmit a first copy of a signal from the antenna, the signal comprising a plurality of time-division multiple access (TDMA) frames, the transmitter further to transmit a second copy of the signal from the antenna, the second copy having a fixed delay and a random phase relative to the first copy, wherein the random phase changes from one of the TDMA frames to another of the TDMA frames, and wherein the first copy of the signal and the second copy of the signal are transmitted using hopping carrier frequencies.

9. The system of claim 8 wherein the fixed delay is about equal to $\frac{1}{2W}$, wherein W is a separation value, and wherein consecutive pairs of the hopping carrier frequencies for consecutive pairs of the TDMA frames are separated by an odd multiple of W.

10. The system of claim 9 wherein W is about equal to 200 kHz, and the fixed delay is about equal to 2.5 μsec.

11. The system of claim 9 wherein a group of hopping carrier frequencies are partitioned into at least two sets of carrier frequencies, and wherein consecutive pairs of hopping carrier frequencies for consecutive pairs of the TDMA frames are from different ones of the at least two sets.

12. The system of claim 11 wherein the at least two sets comprise a first set and a second set of carrier frequencies, wherein each even one of the TDMA frames has a respective carrier frequency selected from the first set, and each odd one of the TDMA frames has a respective carrier frequency selected from the second set.

13. The system of claim 8 wherein the transmitter is further to transmit a third copy of the signal from the antenna using the hopping carrier frequencies, the third copy having a fixed delay which differs from the fixed delay associated with the second copy, and a random phase which differs from the random phase associated with the second copy and changes from one of the TDMA frames to another of the TDMA frames.

14. The system of claim 8 further comprising:

a baseband channel coding and interleaving processor, a modulator, and a pulse shaper to form the signal based on a speech signal.

15. A method comprising:

partitioning a group of hopping carrier frequencies into at least two sets of carrier frequencies; and

transmitting a first signal in a first sector using a first random sequence of hopping carrier frequencies, wherein consecutive pairs of the hopping carrier frequencies in the first random sequence are from different ones of the at least two sets.

16. The method of claim 15 wherein the first signal comprises a plurality of first frames, wherein the at least two sets comprise a first set and a second set of carrier frequencies, wherein each even one of the first frames has a respective carrier frequency selected from the first set, and each odd one of the first frames has a respective carrier frequency selected from the second set.

17. The method of claim 16 further comprising:

transmitting a second signal in a second sector using a second random sequence of hopping carrier frequencies, wherein the second sector is proximate the first sector, wherein the second signal comprises a plurality of second frames, wherein each even one of the second frames has a respective carrier frequency selected from the second set, and each odd one of the second frames has a respective carrier frequency selected from the first set.

18. The method of claim 15 further comprising:

transmitting a second signal in a second sector using a second random sequence of hopping carrier frequencies, wherein the second sector is proximate to the first sector, wherein consecutive pairs of the hopping carrier frequencies in the second random sequence are from different ones of the at least two sets.

19. A system comprising:

at least one transmitter to transmit a first signal in a first sector using a first random sequence of hopping carrier frequencies, wherein consecutive pairs of the hopping carrier frequencies in the first random sequence are not from the same one of at least two sets of carrier frequencies into which a group of hopping carrier frequencies are partitioned.

20. The system of claim 19 wherein the first signal comprises a plurality of first frames, wherein the at least two sets comprise a first set and a second set of carrier frequencies, wherein each even one of the first frames has a respective carrier frequency selected from the first set, and each odd one of the first frames has a respective carrier frequency selected from the second set.

21. The system of claim 20 wherein the at least one transmitter is further to transmit a second signal in a second sector using a second random sequence of hopping carrier frequencies, wherein the second sector is proximate the first sector, wherein the second signal comprises a plurality of second frames, wherein each even one of the second frames has a respective carrier frequency selected from the second set, and each odd one of the second frames has a respective carrier frequency selected from the first set.

22. The system of claim 19 wherein the at least one transmitter is further to transmit a second signal in a second sector using a second random sequence of hopping carrier frequencies, wherein the second sector is proximate to the first sector, wherein consecutive pairs of the hopping carrier frequencies in the second random sequence are not from the same one of the at least two sets.